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Comparative Radiopacity Evaluation of Eight Provisional Restoration Materials

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Abstract

Objectives: The purpose of this study was to evaluate the radiopacity value of eight provisional restorative materials.

Methods: The specimens were divided into 8 groups (n=10) based on commercial product which were UNIFAST Trad, Dentalon Plus, Luxatemp Star, Luxatemp Fluorescence, LuxaCrown, Protemp 4, SmarTemp X1 and VIPI BLOCK TRILUX. Disc specimens of provisional restoration materials (diameter: 6 mm and thickness: 1 mm) were fabricated by manufacturer's instruction. The samples were digitally radiographed together the aluminium step wedge used as standard for radiologic analysis. The digital radiographic images were performed and analyzed with Image J program. The relationship between the gray value for each specimen and the aluminium step wedge thickness were plotted. Data were analyzed using one-way analysis of variance (ANOVA) and Post hoc Tukey's test at 95% confidence level.

Results: Luxatemp Fluorescence showed the highest radiopacity value ($p<0.05$). While UNIFAST Trad and Dentalon Plus demonstrated the lowest radiopacity value ($p<0.05$) in all group of specimens. Protemp 4 did not show a statistically significant difference from VIPI BLOCK TRILUX groups ($p>0.05$).

Conclusions: There were statistically significant of radiopaque among eight groups of provisional restoration materials

Keywords: Bis-acryl composite materials, PEMA, PMMA, provisional restoration, radiopacity